929273

Solutia Inc.
575 Maryville Centre Drive
St. Louis, Missouri 63141

Tel: 314-674-3312
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gmrina@solutia.com

May 4, 2012

Mr. Kenneth Bardo - LU-9J
U.S. EPA Region V
Corrective Action Section
77 West Jackson Boulevard
Chicago, IL 60604-3507

VIA FEDEX

Re: Route 3 Drum Site Groundwater Monitoring Program
1st Quarter 2012 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

Dear Mr. Bardo:

Enclosed please find the Route 3 Drum Site Groundwater Monitoring Program 1st Quarter 2012 Data Report for Solutia Inc.'s W. G. Krummrich Plant, Sauget, IL.

If you have any questions or comments regarding this report, please contact me at (314) 674-3312 or gmrina@solutia.com

Sincerely,

Gerald M. Rinaldi
Manager, Remediation Services

Enclosure

cc: Distribution List

DISTRIBUTION LIST

Route 3 Drum Site Groundwater Monitoring Program
1st Quarter 2012 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

USEPA

Stephanie Linebaugh
USEPA Region 5 - SR6J, 77 West Jackson Boulevard, Chicago, IL 60604

Booz Allen Hamilton

Dan Briller
Booz Allen Hamilton, 8283 Greensboro Drive, McLean, VA 22102

Solutia

Brett Shank 500 Monsanto Avenue, Sauget, IL 62206-1198

1ST QUARTER 2012
DATA REPORT

ILLINOIS ROUTE 3 DRUM SITE GROUNDWATER SAMPLING

SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

Prepared for
Solutia Inc.
575 Maryville Centre Drive
St. Louis, Missouri 63141

April 2012

URS Corporation
1001 Highland Plaza Drive West, Suite 300
St. Louis, MO 63110
(314) 429-0100
Project # 21562682.00006

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1.0 INTRODUCTION

Solutia Inc. (Solutia) is conducting groundwater monitoring activities as outlined in the Revised Illinois Route 3 Drum Site Operation and Maintenance Plan (Solutia, 2008). The Illinois Route 3 Drum Site (Site) is an area associated with the Solutia W.G. Krummrich (WGK) Facility located in Sauget, Illinois that is subject to a RCRA Administrative Order on Consent (AOC) entered into by the U.S. EPA and Solutia on May 3, 2000. This report presents the results of the sampling event completed in 1st Quarter 2012 (1Q12). The Site is located in the area identified as "Lot F" in **Figure 1**.

During the 1Q12 sampling event, groundwater samples were collected from two Shallow Hydrogeologic Unit (SHU) monitoring wells, designated GM-31A and GM-58A (**Figure 2**), located hydraulically downgradient of the Site**.** Samples from each well were analyzed for select semivolatile organic compounds (SVOCs) using EPA Method 8270C. In addition, samples were collected from both wells for evaluation of monitored natural attenuation (MNA). The types of natural attenuation processes active at the site will be determined by measurements of the following key geochemical parameters: alkalinity, carbon dioxide, chloride, dissolved oxygen (DO), ferrous iron, total and dissolved iron, total and dissolved manganese, methane, nitrate, sulfate, total and dissolved organic carbon, and oxidation-reduction potential (ORP).

2.0 FIELD PROCEDURES

URS Corporation (URS) personnel collected groundwater level measurements on February 9 and 10, 2012 and conducted the 1Q12 Illinois Route 3 Drum Site groundwater sampling on February 23, 2012[1]. Groundwater samples were collected from two monitoring wells during the 1Q12 sampling event. This section summarizes the field investigative procedures.

Groundwater Level Measurements - An oil/water interface probe was used to measure depth to static groundwater levels, the thickness of non-aqueous phase liquid (NAPL) if present, and total well depths to 0.01 feet. Depth-to-groundwater measurements for the 1Q12 sampling event are presented in **Table 1**. NAPL was not detected in either of the monitoring wells.

Groundwater Sampling - Low-flow sampling techniques were used for groundwater sample collection. At each monitoring well, disposable, low-density polyethylene tubing was attached to a submersible pump (GM-31A) or peristaltic pump (GM-58A), and was then lowered into the well to the middle of the screened interval. Monitoring wells were purged at a rate of

[1] The February 9th and 10th gauging was part of a comprehensive event which included monitoring wells associated with other WGK programs. Groundwater levels in the subject wells were gauged again on February 23rd prior to sampling.

approximately 400 mL/minute to minimize drawdown. If significant drawdown occurred, flow rates were reduced.

Drawdown was measured periodically throughout purging to ensure that it did not exceed 25% of the distance between the pump intake and the top of the screen. Once the flow rate and drawdown were stable, field measurements were collected approximately every three to five minutes. Purging of a well was considered complete when the following water quality parameters remained stable over three consecutive flow-through cell volumes:

Parameter	Stabilization Guidelines
Dissolved Oxygen (DO)	+/- 10% or +/-0.2 mg/L, whichever is greatest
Oxidation-Reduction Potential (ORP)	+/- 20 mV
pH	+/- 0.2 units
Specific Conductivity	+/- 3%

Sampling commenced upon completion of purging. Prior to sample collection, the flow-through cell was bypassed to allow for collection of uncompromised groundwater. Samples were collected at a flow rate less than or equal to the rate at which stabilization was achieved. Sample containers were filled based on laboratory analysis to be performed. Bottles were filled in the following order:

- Gas Sensitive Parameters (e.g., carbon dioxide, methane)
- Semivolatile Organic Compounds (SVOCs)
- General Chemistry (i.e., alkalinity, chloride, total and dissolved iron, total and dissolved manganese, nitrate, sulfate, total and dissolved organic carbon, and ferrous iron)

Samples for analysis of ferrous iron, dissolved iron, dissolved organic carbon, and dissolved manganese were filtered in the field using in-line 0.2 micron disposable filters, represented by a notation of “F (0.2)” in the sample nomenclature.

Quality Assurance/Quality Control (QA/QC) samples consisting of analytical duplicates (AD) were collected at a rate of 10% and matrix spike/matrix spike duplicates (MS/MSD) were collected at a rate of 5%. One duplicate and one MS/MSD sample were collected.

Each sample was labeled immediately following collection. The sample identification system used for each sample involved the following nomenclature “GM-##A-MMYY-QAC” where:

- **GM-##A** – Groundwater Monitoring Well Location (GM) and Number
- **MMYY** – Month and year of sampling quarter, e.g.: February (1st Quarter), 2012 (0212)
- **QAC** – denotes QA/QC samples (when applicable):

- **AD** – analytical duplicate
- **MS or MSD** – Matrix Spike or Matrix Spike Duplicate

Upon collection and labeling, sample containers were immediately placed inside an iced cooler, packed in such a way as to help prevent breakage and maintain inside temperature at or below approximately 4°C. Field personnel recorded the project identification and number, sample description/location, required analysis, date and time of sample collection, type and matrix of sample, number of sample containers, analysis requested/comments, and sampler signature/date/time, with permanent ink on a chain-of-custody (COC). Coolers were sealed between the lid and sides with a custody seal, and then shipped to TestAmerica in Savannah, Georgia by means of overnight delivery service. Sampling data forms are included in **Appendix A**. A copy of the form is included in **Appendix B**.

Field personnel and equipment were decontaminated to ensure the health and safety of those present, maintain sample integrity, and minimize movement of contamination between the work area and off-site locations. Equipment used on-site was decontaminated prior to beginning work, between sampling locations and/or uses, and prior to demobilizing from the site. Non-disposable purging and sampling equipment was decontaminated between each sample acquisition by washing with an Alconox® or equivalent detergent wash, a potable water rinse, and a distilled water rinse. Personnel and small equipment decontamination was performed at the sample locations. Disposable sampling equipment, such as gloves were collected and bagged on a daily basis and managed in accordance with Solutia procedures. Purge water was containerized and handled per Solutia procedures.

3.0 LABORATORY PROCEDURES

Samples were analyzed by TestAmerica Savannah for the 40 CFR 264 Appendix IX SVOCs, MNA parameters, per the Route 3 Drum Site Operation and Maintenance Plan, using the following methodologies:

- SVOCs, via USEPA SW-846 Method 8270C - The constituents of concern identified by the USEPA are 1,1'-Biphenyl, 1-Chloro-2,4-Dinitrobenzene, 2,4,6-Trichlorophenol, 2,4-Dichlorophenol, 2-Chloronitrobenzene/4-Chloronitrobenzene, 2-Nitrobiphenyl, 3-Nitrobiphenyl, 3,4-Dichloronitrobenzene, 1-Chloro-3-Nitrobenzene, 4-Nitrobiphenyl, Nitrobenzene, Pentachlorophenol
- MNA parameters consisting of alkalinity (310.1), carbon dioxide (310.1), chloride (325.2), total and dissolved iron (6010B), total and dissolved manganese (6010B), total and dissolved organic carbon (415.1), nitrate (353.2), sulfate (375.4), and dissolved gases (RSK 175).

Laboratory results were provided in electronic and hard copy formats.

4.0 QUALITY ASSURANCE

Analytical data were reviewed for quality and completeness as described in the Revised Illinois Route 3 Drum Site Operations and Maintenance Plan. Data qualifiers were added, as appropriate, and are included on the data tables and the laboratory report. The Quality Assurance report is included as **Appendix C**. The laboratory report along with data review and validation report are included in **Appendix D**.

A total of five groundwater samples (two investigative groundwater samples, one field duplicate, and one MS/MSD pair) were collected. Samples were analyzed by TestAmerica for SVOCs and MNA parameters by USEPA SW-846 Methods. The results for the various analyses were submitted as sample delivery group (SDG) KOM015 containing results for GM-31A and GM-58A.

Evaluation of the analytical data followed procedures outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA 2008), USEPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Data Review (USEPA 2010) and the Revised Illinois Route 3 Drum Site Operation and Maintenance Plan (Solutia 2008). Based on the above mentioned criteria, results reported for the analyses performed were accepted for their intended use. Acceptable levels of accuracy and precision, based on MS/MSD, LCS, surrogate and field duplicate data were achieved for this SDG to meet the project objectives. Completeness, which is defined to be the percentage of analytical results which are judged to be valid, including estimated detect/non-detect (**J/UJ**) data, was 100 percent.

5.0 OBSERVATIONS

The 1Q12 sampling event was the fifteenth groundwater sampling event conducted in accordance with the Revised Illinois Route 3 Drum Site Operations and Maintenance Plan. SVOCs were detected in groundwater samples collected from monitoring wells GM-31A and GM-58A during the 1Q12 sampling event. Laboratory analytical data for groundwater sample GM-31A-0212 and duplicate indicate detections of 2,4,6-Trichlorophenol (220 and 290 µg/L), 2,4-Dichlorophenol (11 µg/L), 2-Chloronitrobenzene/4-Chloronitrobenzene (57 and 72 µg/L), 2-Nitrobiphenyl (72 and 76 µg/L), and Nitrobenzene (10 µg/L). 1-Chloro-2,4-Dinitrobenzene, 2,4,6-Trichlorophenol, and 2-Chloronitrobenzene/4-Chloronitro-benzene were detected in groundwater sample GM-58A-0212, at concentrations of 28 µg/L, 16 µg/L, and 46 µg/L, respectively. A summary of SVOC detections is provided in **Table 2**, with MNA results provided in **Table 3**.

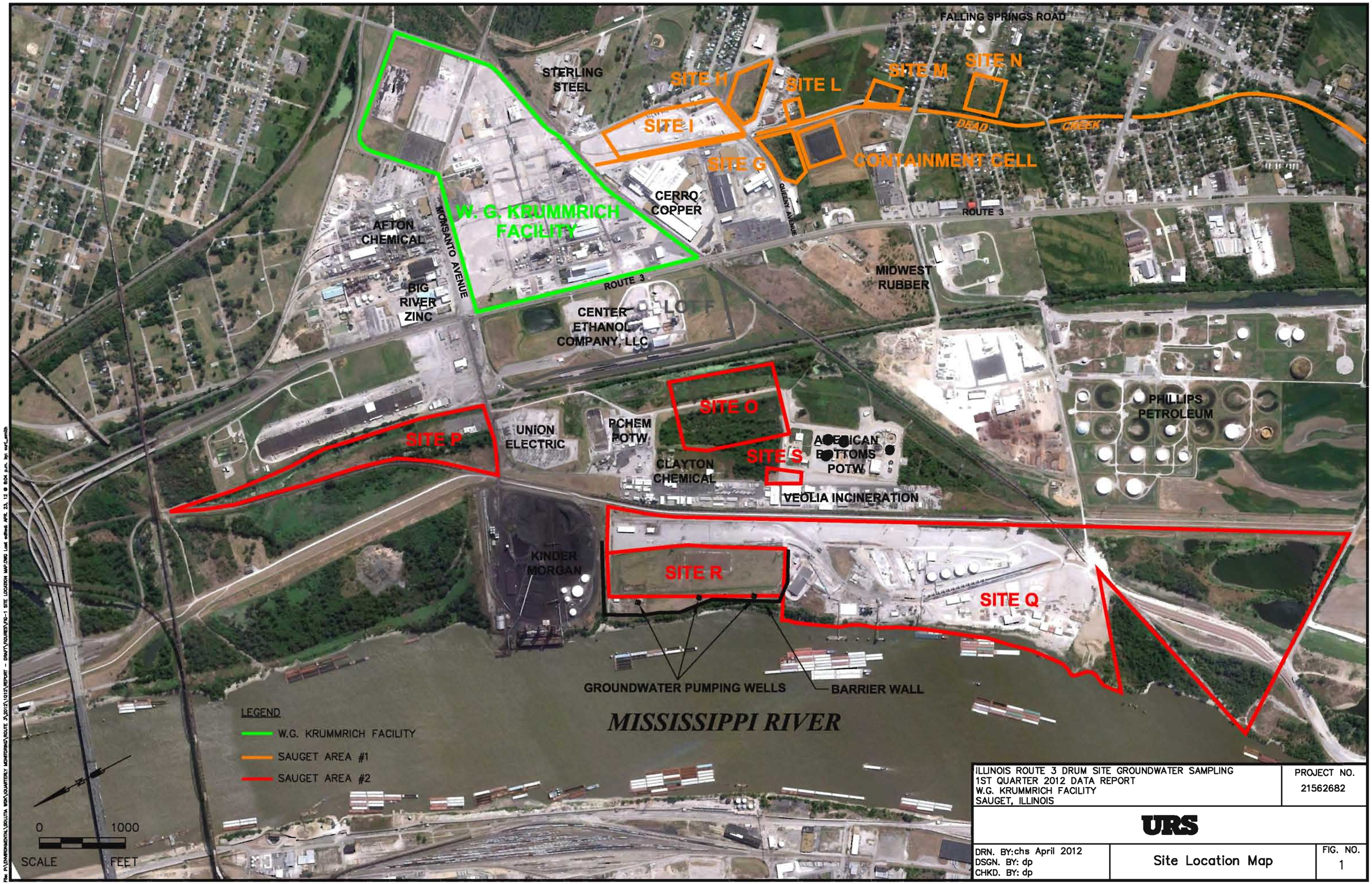
6.0 REFERENCES

Solutia Inc., 2008. Revised Illinois Route 3 Drum Site Operation and Maintenance Plan, W.G. Krummrich Facility, Sauget, IL, May 2008.

U.S. Environmental Protection Agency (USEPA), 2010. Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Data Review.

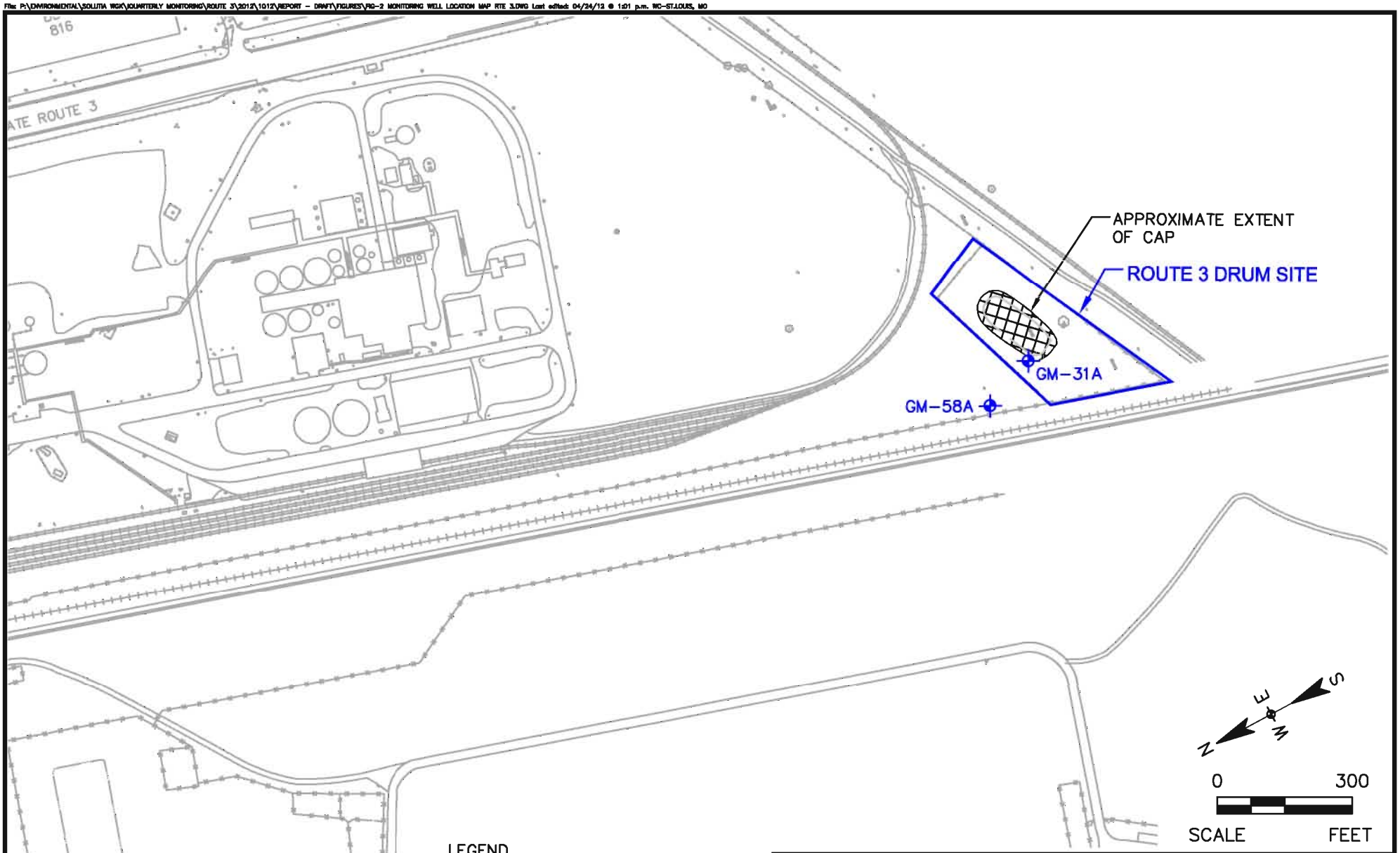
U.S. Environmental Protection Agency (USEPA), 2008 National Functional Guidelines for Superfund Organic Methods Data Review.

Figures



ILLINOIS ROUTE 3 DRUM SITE GROUNDWATER SAMPLING 1ST QUARTER 2012 DATA REPORT W.G. KRUMMRICH FACILITY SAUGET, ILLINOIS	PROJECT NO. 21562682
URS	
DRN. BY:chs April 2012 DSGN. BY: dp CHKD. BY: dp	Site Location Map — FIG. NO. 1

File: P:\ENVIRONMENTAL\SOLUTIA WGK\QUARTERLY MONITORING\ROUTE 3\2012\1012\REPORT - DRAFT\FIGURES\RG-2 MONITORING WELL LOCATION MAP RTE 3.DWG Last edited: 04/24/12 @ 1:01 p.m. WC-ST.LOUIS, MO



LEGEND

MONITORING WELL LOCATION

NOTES:

1. REFER TO TABLE 1 FOR MONITORING WELL CONSTRUCTION INFORMATION.

ILLINOIS ROUTE 3 DRUM SITE GROUNDWATER SAMPLING 1ST QUARTER 2012 DATA REPORT W.G. KRUMMRICH FACILITY SAUGET, ILLINOIS		PROJECT NO. 21562682
URS		
DRN. BY:chs April 2012 DSGN. BY: dp CHKD. BY: dp	Monitoring Well Location Map	FIG. NO. 2

Tables

Table 1
Monitoring Well Gauging Information

Well ID	Construction Details						February 10, 2012		
	Ground Elevation* (feet)	Top of Casing Elevation* (feet)	Depth to Top of Screen (feet bgs)	Depth to Bottom of Screen (feet bgs)	Top of Screen Elevation* (feet)	Bottom of Screen Elevation* (feet)	Depth to Water (feet btoc)	Depth to Bottom (feet btoc)	Water Elevation* (feet)
Shallow Hydrogeologic Unit (SHU 395 - 380 ft NAVD 88)									
GM-31A	416.63	418.63	19.00	39.00	397.63	377.63	25.11	41.15	393.52
GM-58A	412.24	414.24	19.40	39.40	392.84	372.84	20.96	40.84	393.28

Notes:
* - Elevation based upon North American Vertical Datum (NAVD) 88 datum
bgs - below ground surface
btoc - below top of casing

Table 2
Groundwater Analytical Results

Sample ID	Sample Date	1,1'-Biphenyl (ug/L)	1-Chloro-2,4-Dinitrobenzene (ug/L)	2,4,6-Trichlorophenol (ug/L)	2,4-Dichlorophenol (ug/L)	2-Chloronitrobenzene/ 4-Chloronitrobenzene (ug/L)	2-Nitrobiphenyl (ug/L)	3-Nitrobiphenyl (ug/L)	3,4-Dichloronitrobenzene (ug/L)	1-Chloro-3-Nitrobenzene (ug/L)	4-Nitrobiphenyl (ug/L)	Nitrobenzene (ug/L)	Pentachlorophenol (ug/L)
Shallow Hydrogeologic Unit (SHU 395 - 380 ft NAVD 88)													
GM-31A-0212	2/23/2012	<9.5	<9.5	**220 D J**	<9.5	**57 J**	**72**	<9.5	<9.5	<9.5	<9.5	<9.5	<48
GM-31A-0212-AD	2/23/2012	<9.5	<9.5	**290 D J**	**11**	**72 J**	**76**	<9.5	<9.5	<9.5	<9.5	**10**	<48
GM-58A-0212	2/23/2012	<9.9	**28**	**16**	<9.9	**46 J**	<9.9	<9.9	<9.9	<9.9	<9.9	<9.9	<49

Notes:
µg/L = micrograms per liter
< = Result is non-detect, less than the reporting limit given - indicated as a U qualifier on lab data
D = Compounds analyzed at a dilution
J = Estimated value
BOLD indicates concentration greater than the reporting limit

Table 3
Monitored Natural Attenuation Results Summary

Sample ID	Sample Date	Alkalinity (mg/L)	Carbon Dioxide (mg/L)	Chloride (mg/L)	Dissolved Oxygen (mg/L)	Ethane (ug/L)	Ethylene (ug/L)	Ferrous Iron (mg/L)	Iron (mg/L)	Iron, Dissolved (mg/L)	Manganese (mg/L)	Manganese, Dissolved (mg/L)	Methane (ug/L)	Nitrogen, Nitrate (mg/L)	Sulfate as SO4 (mg/L)	Total Organic Carbon (mg/L)	Dissolved Organic Carbon (mg/L)	ORP (mV)
Shallow Hydrogeologic Unit (SHU 395 - 380 ft NAVD 88)																		
GM-31A-0212	2/23/2012	460	28	17	0.02	<1.1	<1		0.35		1.4		7.3	1.4	71	4.8		121.22
GM-31A-F(0.2)-0212	2/23/2012							<0.03		<0.05		1.4					4.8	
GM-58A-0212	2/23/2012	430	20	14	0.05	<1.1	<1		0.38		1.1		4.2	0.084	66	3.4		140.76
GM-58A-F(0.2)-0212	2/23/2012							<0.03		<0.05		1.1					3.4	

Notes:
DO and ORP were measured in the field using a In-Situ Troll 9500 equipped with a flow-thru cell. Values presented represent final measurements before sampling.
Ferrous Iron readings were measured in the field using a Hach DR-890 Colorimeter after the groundwater passed through a 0.2 µm filter
F(0.2) = Sample was filtered utilizing a 0.2 µm filter during sample collection
mg/L = milligrams per liter
ug/L = micrograms per liter
mV = millivolts
< = Result is non-detect, less than the reporting limit given
A blank space indicates sample not analyzed for select analyte

Appendix A

Groundwater Purging and Sampling Forms

In-Situ Inc.

Troll 9000
02/23/12

Low-Flow System
ISI Low-Flow Log

Project Information:

Operator Name	J Staetter
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - Rt. 3

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	44.32 [ft]
Pump placement from TOC	

Well Information:

Well Id	GM-31A
Well diameter	2 [in]
Well total depth	41 [ft]
Depth to top of screen	21 [ft]
Screen length	240 [in]
Depth to Water	25.14 [ft]

Pumping information:

Final pumping rate	400 [mL/min]
Flowcell volume	847.1 [mL]
Calculated Sample Rate	128 [sec]
Sample rate	128 [sec]
Stabilized drawdown	

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	11:04:25	60.38	6.72	885792.13	14.24	0.04	124.34
	11:06:33	60.38	6.71	887486.50	14.77	0.03	123.57
	11:08:42	60.45	6.71	889498.50	13.53	0.03	122.84
	11:10:51	60.44	6.70	891316.25	10.81	0.02	122.11
	11:13:00	60.39	6.70	893114.69	8.76	0.02	121.22
Variance in last 3 readings	11:08:42	0.06	0.00	2012.00	-1.24	-0.01	-0.73
	11:10:51	0.00	-0.01	1817.75	-2.72	-0.01	-0.73
	11:13:00	-0.05	0.00	1798.44	-2.05	-0.01	-0.90

Notes:

In-Situ Inc.

Troll 9000
02/23/12

Low-Flow System
ISI Low-Flow Log

Project Information:

Operator Name	J Staetter
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - Rt. 3

Pump Information:

Pump Model/Type	Peristaltic
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	50.58 [ft]
Pump placement from TOC	

Well Information:

Well Id	GM-58A
Well diameter	2 [in]
Well total depth	41.4 [ft]
Depth to top of screen	21.4 [ft]
Screen length	240 [in]
Depth to Water	21.06 [ft]

Pumping information:

Final pumping rate	400 [mL/min]
Flowcell volume	882.01 [mL]
Calculated Sample Rate	133 [sec]
Sample rate	133 [sec]
Stabilized drawdown	

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	9:46:36	58.69	6.79	648874.25	32.03	0.19	139.76
	9:48:50	58.72	6.76	650983.88	23.36	0.12	141.00
	9:50:25	58.73	6.74	653265.44	18.26	0.10	141.22
	9:52:39	58.74	6.73	654908.31	14.38	0.07	140.92
	9:54:52	58.79	6.72	657053.44	9.40	0.05	140.76
Variance in last 3 readings	9:50:25	0.01	-0.02	2281.56	-5.10	-0.02	0.22
	9:52:39	0.01	-0.01	1642.88	-3.88	-0.03	-0.30
	9:54:52	0.05	-0.01	2145.13	-4.98	-0.02	-0.17

Notes:

Appendix B

Chain-of-Custody

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Dave Palmer	Site Contact: Michael Corbett	Date: 2/23/12	COC No:
URS Corporation	Tel/Fax: (314) 743-4154	Lab Contact: Lidya Gulizia	Carrier: FedEx	1 of 1 COCs
1001 Highlands Plaza Drive West, Suite 300	Analysis Turnaround Time			Job No. 680-77165 21562682.00006
St. Louis, MO 63110	Calendar (C) or Work Days (W)			
(314) 429-0100 Phone	TAT if different from Below			
(314) 429-0462 FAX	☒ 2 weeks			
Project Name: 1Q12 Route 3 GW Sampling	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	SVOCs by 8270C	Total Fe/Mn by 6010B	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Methane by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010B	DOC by 415.1	Sample Specific Notes:
GM-31A-0212	2/23/12	1120	G	Water	11		2	1	1	1	3	2	1			
GM-31A-F(0.2)-0212		1120	G	Water	2	X								1	1	
GM-58A-0212		1000	G	Water	11		2	1	1	1	3	2	1			
GM-58A-F(0.2)-0212		1000	G	Water	2	X								1	1	
GM-58A-0212-MS		1000	G	Water	2		2									
GM-58A-0212-MSD		1000	G	Water	2		2									
GM-31A-0212-AD		1100	G	Water	2		2									
1Q12 Route 3 Trip Blank #				Water	2		2									
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other							1	4	1	1	1	3,1	2	4	2	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant Poison B ☐ Unknown ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ■ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments: Level 4 Data Package

Temp 1.9°C, 1.7°C

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	URS	2/23/12 1600	[signature]	TA	2/23/12 1600
[signature]	TA	2/23/12 1645	Ruth A Daughtry	TA SAV	02.24.12 @ 0857

APR 02 2012

Appendix C

Quality Assurance Report

QUALITY ASSURANCE REPORT

Solutia Inc.
W.G. Krummrich Facility
Sauget, Illinois

Illinois Route 3 Drum Site
1st Quarter 2012 Data Report

Prepared for

Solutia Inc.
575 Maryville Centre Drive
St. Louis, MO 63141

April 2012

URS Corporation
1001 Highland Plaza Drive West, Suite 300
St. Louis, MO 63110
(314) 429-0100
Project # 21562682

1.0 INTRODUCTION

This Quality Assurance Report presents the findings of a review of analytical data for groundwater samples collected in February 2012 at the Illinois Route 3 Drum Site on the Solutia W.G. Krummrich Facility as part of the 1st Quarter 2012 sampling event. The samples were collected by URS Corporation personnel and analyzed by TestAmerica Laboratories located in Savannah, Georgia using USEPA methodologies. Samples were analyzed for certain semivolatile organic compounds (SVOCs) and monitored natural attenuation (MNA) parameters.

One hundred percent of the data were subjected to a data quality review (Level III validation). The Level III review was performed in order to confirm that the analytical data provided by TestAmerica were acceptable in quality for their intended use. A total of five samples (two investigative groundwater samples, one field duplicate, and one matrix spike and matrix spike duplicate (MS/MSD) pair) were collected. Samples were analyzed by TestAmerica for SVOCs and MNAs by the following USEPA SW-846 Methods:

USEPA SW-846 Method 8270C for SVOCs

Samples were also analyzed for MNA parameters by the following methods:

- Method RSK-175 for Dissolved Gases (Ethane, Ethylene, and Methane)
- USEPA Method 310.1 for Alkalinity and Carbon Dioxide
- USEPA Method 325.2 for Chloride
- USEPA Method 6010B for Total and Dissolved Iron and Manganese
- USEPA Method 415.1 for Total and Dissolved Organic Carbon
- USEPA Method 353.2 for Nitrogen, Nitrate
- USEPA Method 375.4 for Sulfate

Samples were reviewed following procedures outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA 2008) and USEPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Data Review (USEPA 2010).

The above guidelines provided the criteria to review the data. Additional quantitative criteria are given in the analytical methods. Qualifiers assigned by the data reviewer have been applied to the laboratory report. The qualifiers indicate data that did not meet acceptance criteria and corrective actions were not successful or not performed.

The various qualifiers are explained in **Tables 1** and **2** below:

TABLE 1 Laboratory Data Qualifiers

Lab Qualifier	Definition
U	Indicates the analyte was analyzed for but not detected.
*	LCS, LCSD, MS, MSD, MD or surrogate exceeds the control limits.
E	Result exceeded the calibration range, secondary dilution required.
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution will be flagged with a D.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
N	MS, MSD: Spike recovery exceeds upper or lower control limits.
H	Sample was prepped or analyzed beyond the specified holding time.
B	Compound was found in the blank and sample.
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.

TABLE 2 URS Data Qualifiers

URS Qualifier	Definition
U	The analyte was analyzed for but was not detected.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Based on the criteria outlined, it is recommended that the results reported for these analyses are accepted for their intended use. Acceptable levels of accuracy, precision, and representativeness (based on MS/MSD, LCS, surrogate compounds and field duplicate results) were achieved for this data set, except where noted in this report. In addition, analytical completeness, defined to be the percentage of analytical results which are judged to be valid, including estimated detect/non-detect (**J/UJ**) values was 100 percent, which meets the completeness goal of 95 percent.

The data review included evaluation of the following criteria:

Organics

- Receipt condition and sample holding times
- Laboratory method blanks
- Surrogate spike recoveries
- Laboratory control sample (LCS) recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) sample recoveries and Relative Percent Difference (RPD) values
- Field duplicate results
- Results reported from dilutions
- Internal standard responses

Inorganics/General chemistry

- Receipt condition and sample holding times
- Laboratory method blank
- LCS recoveries
- MS/MSD sample recoveries and matrix duplicate RPD values
- Field duplicate and laboratory duplicate results
- Results reported from dilutions

2.0 RECEIPT CONDITION AND SAMPLE HOLDING TIMES

Sample holding time requirements for the analyses performed are presented in the methods and/or in the data review guidelines. Review of the sample collection, extraction and analysis dates involved comparing the chain-of-custody and the laboratory data summary forms for accuracy, consistency, and holding time compliance.

Extractions and/or analyses were completed within the recommended holding time requirements.

The laboratory case narrative indicated that the grand mean exception was applied to the initial calibration (ICAL) for SVOCs; professional judgment was used to qualify 2-chloronitrobenzene/4-chloronitrobenzene in samples GM-31A-0212, GM-31A-0212-AD, and GM-58A-0212 due to ICAL percent relative deviation (%RSD) greater than 15%.

Sample ID	Parameter	Analyte	Qualification	Comment
GM-31A-0212	SVOCs	2-chloronitrobenzene/4-chloronitrobenzene	**J**	ICAL %RSD>15%
GM-31A-0212-AD	SVOCs	2-chloronitrobenzene/4-chloronitrobenzene	**J**	ICAL %RSD>15%
GM-58A-0212	SVOCs	2-chloronitrobenzene/4-chloronitrobenzene	**J**	ICAL %RSD>15%

The cooler receipt form indicated that two out of two coolers were received by the laboratory at 1.9°C and 1.6°C which is outside the 4°C ± 2°C criteria. The samples were received in good condition; therefore no qualification of data was required. Additionally, the laboratory noted that a trip blank was listed on the COC but was not included in the cooler. VOC samples were not collected; therefore, trip blanks were not required.

3.0 LABORATORY METHOD BLANK

Laboratory method blank samples evaluate the existence and magnitude of contamination problems resulting from laboratory activities. Laboratory method blank samples were analyzed at the method prescribed frequencies. The method blank sample was non-detect for all target analytes. No qualification of data was required.

4.0 SURROGATE SPIKE RECOVERIES

Surrogate compounds are used to evaluate overall laboratory performance for sample preparation efficiency on a per sample basis. All samples analyzed for SVOCs were spiked with surrogate compounds during sample preparation. USEPA National Functional Guidelines for Superfund Organic Methods Data Review state how data is qualified, if surrogate spike recoveries do not meet evaluation criteria.

Surrogate recoveries were within evaluation criteria. No qualifications of data were required due to surrogate recoveries.

5.0 LABORATORY CONTROL SAMPLE RECOVERIES

Laboratory control samples (LCS) are analyzed with each analytical batch to assess the accuracy of the analytical process. All spiked LCS recoveries were within evaluation criteria. No qualification of data was required.

6.0 MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) SAMPLES

MS/MSD samples are analyzed to assess the accuracy and precision of the analytical process on an analytical sample in a particular matrix. MS/MSD samples were to be collected at a frequency of one per 20 investigative samples in accordance with the work plan. URS Corporation

submitted one MS/MSD sample set for two investigative samples, meeting the work plan frequency requirement.

Sample GM-58A-0212 was spiked and analyzed for SVOCs. Although not requested for MS/MSD analysis, sample GM-31A-F(0.2)-0212 1111 was spiked and analyzed for dissolved organic carbon, and sample GM-31A-0212 was spiked and analyzed for total organic carbon. All spiked MS/MSD recoveries were within evaluation criteria. No qualification of data was required.

7.0 FIELD DUPLICATE RESULTS

Field duplicate results are used to evaluate precision of the entire data collection activity, including sampling, analysis and site heterogeneity. When results for both duplicate and sample values are greater than five times the practical quantitation limit (PQL), satisfactory precision is indicated by an RPD less than or equal to 25 percent for aqueous samples. Where one or both of the results of a field duplicate pair are reported at less than five times the PQL, satisfactory precision is indicated if the field duplicate results agree within 2 times the quantitation limit. Field duplicate results that do not meet these criteria may indicate unsatisfactory precision of the results.

One field duplicate sample was collected for the two investigative samples. This satisfies the requirement in the work plan (one per 10 investigative samples or 10 percent). Field duplicate RPDs were within criteria with the exception summarized in the table below.

Field ID	Field Duplicate ID	Parameter	Analyte	RPD	Qualification
GM-31A-0212	GM-31A-0212-AD	SVOCs	2,4,6-Trichlorophenol	**27**	**J/J**

8.0 INTERNAL STANDARD RESPONSES

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. IS areas must be within -50 percent to +100 percent for SVOCs. Also, the IS retention times must be within 30 seconds of the preceding IS CV retention time.

The internal standard area responses for the SVOCs were verified for the data reviews. IS responses met the criteria. No qualification of the data was required.

9.0 RESULTS REPORTED FROM DILUTIONS

Samples were diluted for the analysis of sulfate and SVOCs. The diluted sample results for sulfate and SVOCs were reported at the lowest possible reporting limit.

Appendix D

Groundwater Analytical Results
(with Data Review Reports)

Solutia Krummrich Data Review
WGK Route 3 Drum Site O&M 1Q12

Laboratory SDG: KOM015

Data Reviewer: Melissa Mansker

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 4/2/2012

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008. USEPA National Functional Guidelines for Superfund Inorganic Data Review 2010

Applicable Work Plan: Revised Illinois Route 3 Drum Site Operation and Maintenance Plan (Solutia 2008)

Sample Identification	
GM-31A-0212	GM-31A-F(0.2)-0212
GM-58A-0212	GM-58A-F(0.2)-0212
GM-31A-0212-AD	

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated samples GM-31A-0212 and GM-31A-0212-AD were diluted and re-analyzed to bring certain compounds within the calibration range of the instrument. Results for the compounds that required dilution were reported from the re-analysis runs (diluted) and the remaining compounds were reported from the original analyses. SVOC compound, 2,4,6-Trichlorophenol was qualified due to field duplicate RPD outside evaluation criteria in field duplicate pair, GM-31A-0212/GM-31A-0212-AD. The grand mean exception was applied to the initial calibration (ICAL) for SVOCs; professional judgment was used to qualify 2-chloronitrobenzene/4-chloronitrobenzene in samples GM-31A-0212, GM-31A-0212-AD, and GM-58A-0212 due to ICAL percent relative standard deviation (%RSD) greater than 15%. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated that two out of two coolers were received by the laboratory at 1.9°C and 1.6°C which is outside the 4°C ± 2°C criteria. The samples were received in good condition; therefore no qualification of data was required. Additionally, the laboratory noted that a trip blank was listed on the COC but was not included in the cooler. VOC samples were not collected; therefore, trip blanks were not required.

3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

Yes, sample GM-58A-0212 was spiked and analyzed for SVOCs. Although not requested for MS/MSD analysis, sample GM-31A-F(0.2)-0212 was spiked and analyzed for dissolved organic carbon, and sample GM-31A-0212 was spiked and analyzed for total organic carbon.

Were MS/MSD recoveries within evaluation criteria?

Yes

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples performed as part of this SDG?

No

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

Yes

Field ID	Field Duplicate ID
GM-31A-0212	GM-31A-0212-AD

Were field duplicate sample RPDs within evaluation criteria?

No

Field ID	Field Duplicate ID	Parameter	Analyte	RPD	Qualification
GM-31A-0212	GM-31A-0212-AD	SVOCs	2,4,6-Trichlorophenol	**27**	**J/J**

11.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; analytes were detected in samples that were diluted.

12.0 Additional Qualifications

Were additional qualifications applied?

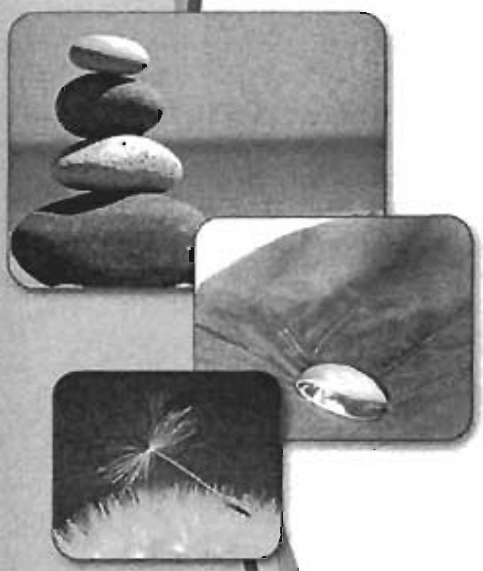
Yes, professional judgment was used to qualify the compounds, 2-chloronitrobenzene/4-chloronitrobenzene in samples GM-31A-0212, GM-31A-0212-AD, and GM-58A-0212 due to ICAL %RSD > 15% as summarized in the table below.

Sample ID	Parameter	Analyte	Qualification	Comment
GM-31A-0212	SVOCs	2-chloronitrobenzene/4-chloronitrobenzene	**J**	ICAL %RSD>15%
GM-31A-0212-AD	SVOCs	2-chloronitrobenzene/4-chloronitrobenzene	**J**	ICAL %RSD>15%
GM-58A-0212	SVOCs	2-chloronitrobenzene/4-chloronitrobenzene	**J**	ICAL %RSD>15%

SDG KOM015

Results of Samples from Monitoring Wells:

GM-31A
GM-58A



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-77165-1
TestAmerica Sample Delivery Group: KOM015
Client Project/Site: WGK Rt. 3 Drum Site O&M/1Q12 - FEB 2012

For:
Solutia Inc.
575 Maryville Centre Dr.
Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Lidya Gulizia

Authorized for release by:
3/29/2012 5:36:19 PM

Lidya Gulizia
Project Manager II
lidya.gulizia@testamericainc.com

cc: Bob Billman

Reviewed on 4/2/2012 MM

Table of Contents

APR 02 2012

Job ID: 680-77165-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: WGK Rt. 3 Drum Site O&M/1Q12 - FEB 2012

Report Number: 680-77165-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 02/24/2012; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.9 and 1.6 C.

SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples GM-31A-0212 (680-77165-1), GM-58A-0212 (680-77165-3) and GM-31A-0212-AD (680-77165-5) were analyzed for semivolatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8270C. The samples were prepared on 02/27/2012 and analyzed on 03/03/2012 and 03/13/2012.

Samples GM-31A-0212 (680-77165-1)[2X] and GM-31A-0212-AD (680-77165-5)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The grand mean exception, as outlined in EPA Method 8000B, was applied to the initial calibration (ICAL) analyzed in batch 230615. This rule states that when one or more compounds in the ICAL fail to meet acceptance criteria, the initial calibration (ICAL) may be used for quantitation if the average %RSD (the grand mean) of all the compounds in the ICAL is less than or equal to 15%RSD. The following compounds are affected: 2-chloronitrobenzene/4-chloronitrobenzene.

No difficulties were encountered during the semivolatiles analyses.

All quality control parameters were within the acceptance limits.

DISSOLVED GASES

Samples GM-31A-0212 (680-77165-1) and GM-58A-0212 (680-77165-3) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 03/08/2012.

No difficulties were encountered during the dissolved gases analyses.

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All quality control parameters were within the acceptance limits.

DISSOLVED METALS (ICP)

Samples GM-31A-F(0.2)-0212 (680-77165-2) and GM-58A-F(0.2)-0212 (680-77165-4) were analyzed for dissolved metals (ICP) in accordance with EPA SW-846 Method 6010B. The samples were prepared and analyzed on 02/27/2012.

Job ID: 680-77165-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

No difficulties were encountered during the metals analyses.

All quality control parameters were within the acceptance limits.

TOTAL RECOVERABLE METALS (ICP)
Samples GM-31A-0212 (680-77165-1) and GM-58A-0212 (680-77165-3) were analyzed for total recoverable metals (ICP) in accordance with EPA SW-846 Method 6010B. The samples were prepared and analyzed on 02/27/2012.

No difficulties were encountered during the metals analyses.

All quality control parameters were within the acceptance limits.

ALKALINITY
Samples GM-31A-0212 (680-77165-1) and GM-58A-0212 (680-77165-3) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 02/28/2012.

No difficulties were encountered during the alkalinity analyses.

All quality control parameters were within the acceptance limits.

CHLORIDE
Samples GM-31A-0212 (680-77165-1) and GM-58A-0212 (680-77165-3) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 02/28/2012.

No difficulties were encountered during the Chloride analyses.

All other quality control parameters were within the acceptance limits.

NITRATE-NITRITE AS NITROGEN
Samples GM-31A-0212 (680-77165-1) and GM-58A-0212 (680-77165-3) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 02/24/2012.

No difficulties were encountered during the nitrate-nitrite analyses.

All quality control parameters were within the acceptance limits.

SULFATE
Samples GM-31A-0212 (680-77165-1) and GM-58A-0212 (680-77165-3) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 03/01/2012.

Samples GM-31A-0212 (680-77165-1)[5X] and GM-58A-0212 (680-77165-3)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the sulfate analyses.

All quality control parameters were within the acceptance limits.

TOTAL ORGANIC CARBON
Samples GM-31A-0212 (680-77165-1) and GM-58A-0212 (680-77165-3) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 02/29/2012.

No difficulties were encountered during the TOC analyses.

All quality control parameters were within the acceptance limits.

APR 02 2012

Job ID: 680-77165-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

DISSOLVED ORGANIC CARBON (DOC)

Samples GM-31A-F(0.2)-0212 (680-77165-2) and GM-58A-F(0.2)-0212 (680-77165-4) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 02/29/2012.

No difficulties were encountered during the Dissolved Organic Carbon (DOC) analyses.

All quality control parameters were within the acceptance limits.

APR 02 2012

Sample Summary

Client: Solutia Inc.
Project/Site: WGK Rt. 3 Drum Site O&M/1Q12 - FEB 2012

TestAmerica Job ID: 680-77165-1
SDG: KOM015

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-77165-1	GM-31A-0212	Water	02/23/12 11:20	02/24/12 08:57
680-77165-2	GM-31A-F(0.2)-0212	Water	02/23/12 11:20	02/24/12 08:57
680-77165-3	GM-58A-0212	Water	02/23/12 10:00	02/24/12 08:57
680-77165-4	GM-58A-F(0.2)-0212	Water	02/23/12 10:00	02/24/12 08:57
680-77165-5	GM-31A-0212-AD	Water	02/23/12 11:20	02/24/12 08:57

APR 0 2 2012

Method Summary

Client: Solutia Inc.
Project/Site: WGK Rt. 3 Drum Site O&M/1Q12 - FEB 2012

TestAmerica Job ID: 680-77165-1
SDG: KOM015

Method	Method Description	Protocol	Laboratory
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
6010B	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAWW	TAL SAV
325.2	Chloride	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV
375.4	Sulfate	MCAWW	TAL SAV
415.1	TOC	MCAWW	TAL SAV
415.1	DOC	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

APR 02 2012

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
E	Result exceeded calibration range.
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

APR 02 2012

Client Sample ID: GM-31A-0212 — Lab Sample ID: 680-77165-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
~~2,4,6-Trichlorophenol~~	~~240~~	~~E~~	~~9.5~~		~~ug/L~~	~~1~~		8270C	Total/NA
2-Nitrobiphenyl	72		9.5		ug/L	1		8270C	Total/NA
2-chloronitrobenzene / 4-chloronitrobenzene	57		19		ug/L	1		8270C	Total/NA
2,4,6-Trichlorophenol - DL	220	D J	19		ug/L	2		8270C	Total/NA
2-Nitrobiphenyl - DL	72	D	19		ug/L	2		8270C	Total/NA
2-chloronitrobenzene / 4-chloronitrobenzene - DL	66	D	38		ug/L	2		8270C	Total/NA
Methane	7.3		0.58		ug/L	1		RSK-175	Total/NA
Iron	0.35		0.050		mg/L	1		6010B	Total Recovera
Manganese	1.4		0.010		mg/L	1		6010B	Total Recovera
Chloride	17		1.0		mg/L	1		325.2	Total/NA
Nitrate as N	1.4		0.050		mg/L	1		353.2	Total/NA
Sulfate	71		25		mg/L	5		375.4	Total/NA
Total Organic Carbon	4.8		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	460		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	28		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: GM-31A-F(0.2)-0212 — Lab Sample ID: 680-77165-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese, Dissolved	1.4		0.010		mg/L	1		6010B	Dissolved
Dissolved Organic Carbon	4.8		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: GM-58A-0212 — Lab Sample ID: 680-77165-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2,4,6-Trichlorophenol	16		9.9		ug/L	1		8270C	Total/NA
2-chloronitrobenzene / 4-chloronitrobenzene	46	J	20		ug/L	1		8270C	Total/NA
1-chloro-2,4-dinitrobenzene	28		9.9		ug/L	1		8270C	Total/NA
Methane	4.2		0.58		ug/L	1		RSK-175	Total/NA
Iron	0.38		0.050		mg/L	1		6010B	Total Recovera
Manganese	1.1		0.010		mg/L	1		6010B	Total Recovera
Chloride	14		1.0		mg/L	1		325.2	Total/NA
Nitrate as N	0.084		0.050		mg/L	1		353.2	Total/NA
Sulfate	66		25		mg/L	5		375.4	Total/NA
Total Organic Carbon	3.4		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	430		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	20		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: GM-58A-F(0.2)-0212 — Lab Sample ID: 680-77165-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese, Dissolved	1.1		0.010		mg/L	1		6010B	Dissolved
Dissolved Organic Carbon	3.4		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: GM-31A-0212-AD — Lab Sample ID: 680-77165-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2,4-Dichlorophenol	11		9.5		ug/L	1		8270C	Total/NA
Nitrobenzene	10		9.5		ug/L	1		8270C	Total/NA

APR 02 2012

Client Sample ID: GM-31A-0212-AD (Continued)

Lab Sample ID: 680-77165-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
~~2,4,6-Trichlorophenol~~	~~270~~	~~E~~	~~9.5~~		~~ug/L~~	~~1~~		~~8270C~~	Total/NA
2-Nitrobiphenyl	76		9.5		ug/L	1		8270C	Total/NA
2-chloronitrobenzene / 4-chloronitrobenzene	72	J	19		ug/L	1		8270C	Total/NA
2,4,6-Trichlorophenol - DL	290	D	19		ug/L	2		8270C	Total/NA
2-Nitrobiphenyl - DL	79	D	19		ug/L	2		8270C	Total/NA
2-chloronitrobenzene / 4-chloronitrobenzene - DL	85	D	38		ug/L	2		8270C	Total/NA

APR 0 2 2012

Client Sample ID: GM-31A-0212
Date Collected: 02/23/12 11:20
Date Received: 02/24/12 08:57

Lab Sample ID: 680-77165-1
Matrix: Water

*Do not use this data. Use all other data.

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	9.5	U	9.5		ug/L		02/27/12 15:42	03/03/12 14:01	1
2,4-Dichlorophenol	9.5	U	9.5		ug/L		02/27/12 15:42	03/03/12 14:01	1
Nitrobenzene	9.5	U	9.5		ug/L		02/27/12 15:42	03/03/12 14:01	1
Pentachlorophenol	48	U	48		ug/L		02/27/12 15:42	03/03/12 14:01	1
~~2,4,6-Trichlorophenol~~	~~210~~	~~E~~	~~9.5~~		~~ug/L~~		~~02/27/12 15:42~~	~~03/03/12 14:01~~	1
1-Chloro-3-nitrobenzene	9.5	U	9.5		ug/L		02/27/12 15:42	03/03/12 14:01	1
2-Nitrobiphenyl	**72**		9.5		ug/L		02/27/12 15:42	03/03/12 14:01	1
3-Nitrobiphenyl	9.5	U	9.5		ug/L		02/27/12 15:42	03/03/12 14:01	1
3,4-Dichloronitrobenzene	9.5	U	9.5		ug/L		02/27/12 15:42	03/03/12 14:01	1
4-Nitrobiphenyl	9.5	U	9.5		ug/L		02/27/12 15:42	03/03/12 14:01	1
2-chloronitrobenzene / 4-chloronitrobenzene	**57**	J	19		ug/L		02/27/12 15:42	03/03/12 14:01	1
1-chloro-2,4-dinitrobenzene	9.5	U	9.5		ug/L		02/27/12 15:42	03/03/12 14:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*54*		*38 - 130*	*02/27/12 15:42*	*03/03/12 14:01*	*1*
2-Fluorophenol	*41*		*25 - 130*	*02/27/12 15:42*	*03/03/12 14:01*	*1*
Nitrobenzene-d5	*53*		*39 - 130*	*02/27/12 15:42*	*03/03/12 14:01*	*1*
Phenol-d5	*41*		*25 - 130*	*02/27/12 15:42*	*03/03/12 14:01*	*1*
Terphenyl-d14	*39*		*10 - 143*	*02/27/12 15:42*	*03/03/12 14:01*	*1*
2,4,6-Tribromophenol	*68*		*31 - 141*	*02/27/12 15:42*	*03/03/12 14:01*	*1*

*Use these results only. All other data was reported from the 1x dilution analysis.

Method: 8270C - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	19	U	19		ug/L		02/27/12 15:42	03/13/12 18:17	2
2,4-Dichlorophenol	19	U	19		ug/L		02/27/12 15:42	03/13/12 18:17	2
Nitrobenzene	19	U	19		ug/L		02/27/12 15:42	03/13/12 18:17	2
Pentachlorophenol	95	U	95		ug/L		02/27/12 15:42	03/13/12 18:17	2
2,4,6-Trichlorophenol	**220**	D J	19		ug/L		02/27/12 15:42	03/13/12 18:17	2
1-Chloro-3-nitrobenzene	19	U	19		ug/L		02/27/12 15:42	03/13/12 18:17	2
2-Nitrobiphenyl	**72**	D	19		ug/L		02/27/12 15:42	03/13/12 18:17	2
3-Nitrobiphenyl	19	U	19		ug/L		02/27/12 15:42	03/13/12 18:17	2
3,4-Dichloronitrobenzene	19	U	19		ug/L		02/27/12 15:42	03/13/12 18:17	2
4-Nitrobiphenyl	19	U	19		ug/L		02/27/12 15:42	03/13/12 18:17	2
2-chloronitrobenzene / 4-chloronitrobenzene	**66**	D	38		ug/L		02/27/12 15:42	03/13/12 18:17	2
1-chloro-2,4-dinitrobenzene	19	U	19		ug/L		02/27/12 15:42	03/13/12 18:17	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*56*		*38 - 130*	*02/27/12 15:42*	*03/13/12 18:17*	*2*
2-Fluorophenol	*47*		*25 - 130*	*02/27/12 15:42*	*03/13/12 18:17*	*2*
Nitrobenzene-d5	*60*		*39 - 130*	*02/27/12 15:42*	*03/13/12 18:17*	*2*
Phenol-d5	*50*		*25 - 130*	*02/27/12 15:42*	*03/13/12 18:17*	*2*
Terphenyl-d14	*39*		*10 - 143*	*02/27/12 15:42*	*03/13/12 18:17*	*2*
2,4,6-Tribromophenol	*69*		*31 - 141*	*02/27/12 15:42*	*03/13/12 18:17*	*2*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			03/08/12 13:06	1
Ethylene	1.0	U	1.0		ug/L			03/08/12 13:06	1
Methane	**7.3**		0.58		ug/L			03/08/12 13:06	1

APR 02 2012

Client Sample ID: GM-31A-0212
Date Collected: 02/23/12 11:20
Date Received: 02/24/12 08:57

Lab Sample ID: 680-77165-1
Matrix: Water

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.35		0.050		mg/L		02/27/12 09:30	02/27/12 19:12	1
Manganese	1.4		0.010		mg/L		02/27/12 09:30	02/27/12 19:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	17		1.0		mg/L			02/28/12 09:37	1
Nitrate as N	1.4		0.050		mg/L			02/24/12 15:35	1
Sulfate	71		25		mg/L			03/01/12 12:13	5
Total Organic Carbon	4.8		1.0		mg/L			02/29/12 17:05	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	460		5.0		mg/L			02/28/12 16:57	1
Carbon Dioxide, Free	28		5.0		mg/L			02/28/12 16:57	1

APR 02 2012

Client Sample ID: GM-31A-F(0.2)-0212
Date Collected: 02/23/12 11:20
Date Received: 02/24/12 08:57

Lab Sample ID: 680-77165-2
Matrix: Water

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	0.050	U	0.050		mg/L		02/27/12 09:30	02/27/12 19:17	1
Manganese, Dissolved	1.4		0.010		mg/L		02/27/12 09:30	02/27/12 19:17	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	4.8		1.0		mg/L			02/29/12 21:07	1

APR 02 2012

Client Sample ID: GM-58A-0212

Lab Sample ID: 680-77165-3

Date Collected: 02/23/12 10:00
Matrix: Water
Date Received: 02/24/12 08:57

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	9.9	U	9.9		ug/L		02/27/12 15:42	03/03/12 07:00	1
2,4-Dichlorophenol	9.9	U	9.9		ug/L		02/27/12 15:42	03/03/12 07:00	1
Nitrobenzene	9.9	U	9.9		ug/L		02/27/12 15:42	03/03/12 07:00	1
Pentachlorophenol	49	U	49		ug/L		02/27/12 15:42	03/03/12 07:00	1
2,4,6-Trichlorophenol	**16**		9.9		ug/L		02/27/12 15:42	03/03/12 07:00	1
1-Chloro-3-nitrobenzene	9.9	U	9.9		ug/L		02/27/12 15:42	03/03/12 07:00	1
2-Nitrobiphenyl	9.9	U	9.9		ug/L		02/27/12 15:42	03/03/12 07:00	1
3-Nitrobiphenyl	9.9	U	9.9		ug/L		02/27/12 15:42	03/03/12 07:00	1
3,4-Dichloronitrobenzene	9.9	U	9.9		ug/L		02/27/12 15:42	03/03/12 07:00	1
4-Nitrobiphenyl	9.9	U	9.9		ug/L		02/27/12 15:42	03/03/12 07:00	1
2-chloronitrobenzene / 4-chloronitrobenzene	**46**	J	20		ug/L		02/27/12 15:42	03/03/12 07:00	1
1-chloro-2,4-dinitrobenzene	**28**		9.9		ug/L		02/27/12 15:42	03/03/12 07:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*53*		*38 - 130*	*02/27/12 15:42*	*03/03/12 07:00*	*1*
2-Fluorophenol	*49*		*25 - 130*	*02/27/12 15:42*	*03/03/12 07:00*	*1*
Nitrobenzene-d5	*56*		*39 - 130*	*02/27/12 15:42*	*03/03/12 07:00*	*1*
Phenol-d5	*51*		*25 - 130*	*02/27/12 15:42*	*03/03/12 07:00*	*1*
Terphenyl-d14	*72*		*10 - 143*	*02/27/12 15:42*	*03/03/12 07:00*	*1*
2,4,6-Tribromophenol	*59*		*31 - 141*	*02/27/12 15:42*	*03/03/12 07:00*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			03/08/12 13:19	1
Ethylene	1.0	U	1.0		ug/L			03/08/12 13:19	1
Methane	**4.2**		0.58		ug/L			03/08/12 13:19	1

Method: 6010B - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**0.38**		0.050		mg/L		02/27/12 09:30	02/27/12 19:22	1
Manganese	**1.1**		0.010		mg/L		02/27/12 09:30	02/27/12 19:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**14**		1.0		mg/L			02/28/12 09:42	1
Nitrate as N	**0.084**		0.050		mg/L			02/24/12 15:36	1
Sulfate	**66**		25		mg/L			03/01/12 12:13	5
Total Organic Carbon	**3.4**		1.0		mg/L			02/29/12 17:54	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**430**		5.0		mg/L			02/28/12 17:05	1
Carbon Dioxide, Free	**20**		5.0		mg/L			02/28/12 17:05	1

APR 02 2012

Client Sample ID: GM-58A-F(0.2)-0212
Lab Sample ID: 680-77165-4
Date Collected: 02/23/12 10:00
Matrix: Water
Date Received: 02/24/12 08:57

Method: 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	0.050	U	0.050		mg/L		02/27/12 09:30	02/27/12 19:26	1
Manganese, Dissolved	**1.1**		0.010		mg/L		02/27/12 09:30	02/27/12 19:26	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	**3.4**		1.0		mg/L			02/29/12 21:48	1

APR 02 2012

Client Sample ID: GM-31A-0212-AD
Date Collected: 02/23/12 11:20
Date Received: 02/24/12 08:57 * Do not use this data. Use all other data.

Lab Sample ID: 680-77165-5
Matrix: Water

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	9.5	U	9.5		ug/L		02/27/12 15:42	03/03/12 14:28	1
2,4-Dichlorophenol	**11**		9.5		ug/L		02/27/12 15:42	03/03/12 14:28	1
Nitrobenzene	**10**		9.5		ug/L		02/27/12 15:42	03/03/12 14:28	1
Pentachlorophenol	48	U	48		ug/L		02/27/12 15:42	03/03/12 14:28	1
* ~~2,4,6-Trichlorophenol~~	~~270~~	~~E~~	~~9.5~~		~~ug/L~~		~~02/27/12 15:42~~	~~03/03/12 14:28~~	1
1-Chloro-3-nitrobenzene	9.5	U	9.5		ug/L		02/27/12 15:42	03/03/12 14:28	1
2-Nitrobiphenyl	**76**		9.5		ug/L		02/27/12 15:42	03/03/12 14:28	1
3-Nitrobiphenyl	9.5	U	9.5		ug/L		02/27/12 15:42	03/03/12 14:28	1
3,4-Dichloronitrobenzene	9.5	U	9.5		ug/L		02/27/12 15:42	03/03/12 14:28	1
4-Nitrobiphenyl	9.5	U	9.5		ug/L		02/27/12 15:42	03/03/12 14:28	1
2-chloronitrobenzene / 4-chloronitrobenzene	**72**	J	19		ug/L		02/27/12 15:42	03/03/12 14:28	1
1-chloro-2,4-dinitrobenzene	9.5	U	9.5		ug/L		02/27/12 15:42	03/03/12 14:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*70*		*38 - 130*	*02/27/12 15:42*	*03/03/12 14:28*	*1*
2-Fluorophenol	*62*		*25 - 130*	*02/27/12 15:42*	*03/03/12 14:28*	*1*
Nitrobenzene-d5	*71*		*39 - 130*	*02/27/12 15:42*	*03/03/12 14:28*	*1*
Phenol-d5	*64*		*25 - 130*	*02/27/12 15:42*	*03/03/12 14:28*	*1*
Terphenyl-d14	*52*		*10 - 143*	*02/27/12 15:42*	*03/03/12 14:28*	*1*
2,4,6-Tribromophenol	*79*		*31 - 141*	*02/27/12 15:42*	*03/03/12 14:28*	*1*

* Use these results only. All other data was reported from the 1x dilution analysis.

Method: 8270C - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	19	U	19		ug/L		02/27/12 15:42	03/13/12 18:46	2
2,4-Dichlorophenol	19	U	19		ug/L		02/27/12 15:42	03/13/12 18:46	2
Nitrobenzene	19	U	19		ug/L		02/27/12 15:42	03/13/12 18:46	2
Pentachlorophenol	95	U	95		ug/L		02/27/12 15:42	03/13/12 18:46	2
* **2,4,6-Trichlorophenol**	**290**	D	J 19		ug/L		02/27/12 15:42	03/13/12 18:46	2
1-Chloro-3-nitrobenzene	19	U	19		ug/L		02/27/12 15:42	03/13/12 18:46	2
2-Nitrobiphenyl	**79**	D	19		ug/L		02/27/12 15:42	03/13/12 18:46	2
3-Nitrobiphenyl	19	U	19		ug/L		02/27/12 15:42	03/13/12 18:46	2
3,4-Dichloronitrobenzene	19	U	19		ug/L		02/27/12 15:42	03/13/12 18:46	2
4-Nitrobiphenyl	19	U	19		ug/L		02/27/12 15:42	03/13/12 18:46	2
2-chloronitrobenzene / 4-chloronitrobenzene	**85**	D	38		ug/L		02/27/12 15:42	03/13/12 18:46	2
1-chloro-2,4-dinitrobenzene	19	U	19		ug/L		02/27/12 15:42	03/13/12 18:46	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*77*		*38 - 130*	*02/27/12 15:42*	*03/13/12 18:46*	*2*
2-Fluorophenol	*69*		*25 - 130*	*02/27/12 15:42*	*03/13/12 18:46*	*2*
Nitrobenzene-d5	*79*		*39 - 130*	*02/27/12 15:42*	*03/13/12 18:46*	*2*
Phenol-d5	*71*		*25 - 130*	*02/27/12 15:42*	*03/13/12 18:46*	*2*
Terphenyl-d14	*58*		*10 - 143*	*02/27/12 15:42*	*03/13/12 18:46*	*2*
2,4,6-Tribromophenol	*87*		*31 - 141*	*02/27/12 15:42*	*03/13/12 18:46*	*2*

APR 02 2012

Surrogate Summary

Client: Solutia Inc.
Project/Site: WGK Rt. 3 Drum Site O&M/1Q12 - FEB 2012

TestAmerica Job ID: 680-77165-1
SDG: KOM015

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPH	TBP
Lab Sample ID	Client Sample ID	(38-130)	(25-130)	(39-130)	(25-130)	(10-143)	(31-141)
680-77165-1	GM-31A-0212	54	41	53	41	39	68
680-77165-1 - DL	GM-31A-0212	56	47	60	50	39	69
680-77165-3	GM-58A-0212	53	49	56	51	72	59
680-77165-3 MS	GM-58A-0212	65	54	64	50	65	72
680-77165-3 MSD	GM-58A-0212	63	50	58	52	71	76
680-77165-5	GM-31A-0212-AD	70	62	71	64	52	79
680-77165-5 - DL	GM-31A-0212-AD	77	69	79	71	58	87
LCS 680-230106/13-A	Lab Control Sample	79	70	77	74	85	86
LCS 680-230106/24-A	Lab Control Sample	69	67	77	67	92	69
LCSD 680-230106/14-A	Lab Control Sample Dup	82	68	78	71	87	87
LCSD 680-230106/25-A	Lab Control Sample Dup	65	61	73	60	82	65
MB 680-230106/12-A	Method Blank	78	65	75	68	89	81

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5
PHL = Phenol-d5
TPH = Terphenyl-d14
TBP = 2,4,6-Tribromophenol

APR 02 2012

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-230106/12-A
Matrix: Water
Analysis Batch: 230641

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 230106

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	10	U	10		ug/L		02/27/12 15:42	03/02/12 20:47	1
2,4-Dichlorophenol	10	U	10		ug/L		02/27/12 15:42	03/02/12 20:47	1
Nitrobenzene	10	U	10		ug/L		02/27/12 15:42	03/02/12 20:47	1
Pentachlorophenol	50	U	50		ug/L		02/27/12 15:42	03/02/12 20:47	1
2,4,6-Trichlorophenol	10	U	10		ug/L		02/27/12 15:42	03/02/12 20:47	1
1-Chloro-3-nitrobenzene	10	U	10		ug/L		02/27/12 15:42	03/02/12 20:47	1
2-Nitrobiphenyl	10	U	10		ug/L		02/27/12 15:42	03/02/12 20:47	1
3-Nitrobiphenyl	10	U	10		ug/L		02/27/12 15:42	03/02/12 20:47	1
3,4-Dichloronitrobenzene	10	U	10		ug/L		02/27/12 15:42	03/02/12 20:47	1
4-Nitrobiphenyl	10	U	10		ug/L		02/27/12 15:42	03/02/12 20:47	1
2-chloronitrobenzene / 4-chloronitrobenzene	20	U	20		ug/L		02/27/12 15:42	03/02/12 20:47	1
1-chloro-2,4-dinitrobenzene	10	U	10		ug/L		02/27/12 15:42	03/02/12 20:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*78*		*38 - 130*	*02/27/12 15:42*	*03/02/12 20:47*	*1*
2-Fluorophenol	*65*		*25 - 130*	*02/27/12 15:42*	*03/02/12 20:47*	*1*
Nitrobenzene-d5	*75*		*39 - 130*	*02/27/12 15:42*	*03/02/12 20:47*	*1*
Phenol-d5	*68*		*25 - 130*	*02/27/12 15:42*	*03/02/12 20:47*	*1*
Terphenyl-d14	*89*		*10 - 143*	*02/27/12 15:42*	*03/02/12 20:47*	*1*
2,4,6-Tribromophenol	*81*		*31 - 141*	*02/27/12 15:42*	*03/02/12 20:47*	*1*

Lab Sample ID: LCS 680-230106/13-A
Matrix: Water
Analysis Batch: 230641

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 230106

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1'-Biphenyl	100	80.4		ug/L		80	54 - 130
2,4-Dichlorophenol	100	81.2		ug/L		81	54 - 130
Nitrobenzene	100	78.7		ug/L		79	56 - 130
Pentachlorophenol	100	88.0		ug/L		88	42 - 138
2,4,6-Trichlorophenol	100	83.6		ug/L		84	57 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*79*		*38 - 130*
2-Fluorophenol	*70*		*25 - 130*
Nitrobenzene-d5	*77*		*39 - 130*
Phenol-d5	*74*		*25 - 130*
Terphenyl-d14	*85*		*10 - 143*
2,4,6-Tribromophenol	*86*		*31 - 141*

Lab Sample ID: LCS 680-230106/24-A
Matrix: Water
Analysis Batch: 230619

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 230106

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1-Chloro-3-nitrobenzene	100	78.7		ug/L		79	10 - 130
2-Nitrobiphenyl	100	81.8		ug/L		82	10 - 130
3-Nitrobiphenyl	100	88.5		ug/L		89	10 - 130

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Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-230106/24-A
Matrix: Water
Analysis Batch: 230619

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 230106

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
3,4-Dichloronitrobenzene	100	78.4		ug/L		78	10 - 130
4-Nitrobiphenyl	100	88.0		ug/L		88	10 - 130
2-chloronitrobenzene / 4-chloronitrobenzene	200	162		ug/L		81	10 - 130
1-chloro-2,4-dinitrobenzene	100	81.7		ug/L		82	10 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*69*		*38 - 130*
2-Fluorophenol	*67*		*25 - 130*
Nitrobenzene-d5	*77*		*39 - 130*
Phenol-d5	*67*		*25 - 130*
Terphenyl-d14	*92*		*10 - 143*
2,4,6-Tribromophenol	*69*		*31 - 141*

Lab Sample ID: LCSD 680-230106/14-A
Matrix: Water
Analysis Batch: 230641

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 230106

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1'-Biphenyl	100	77.5		ug/L		77	54 - 130	4	50
2,4-Dichlorophenol	100	78.2		ug/L		78	54 - 130	4	50
Nitrobenzene	100	76.2		ug/L		76	56 - 130	3	50
Pentachlorophenol	100	85.9		ug/L		86	42 - 138	2	50
2,4,6-Trichlorophenol	100	81.4		ug/L		81	57 - 130	3	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*82*		*38 - 130*
2-Fluorophenol	*68*		*25 - 130*
Nitrobenzene-d5	*78*		*39 - 130*
Phenol-d5	*71*		*25 - 130*
Terphenyl-d14	*87*		*10 - 143*
2,4,6-Tribromophenol	*87*		*31 - 141*

Lab Sample ID: LCSD 680-230106/25-A
Matrix: Water
Analysis Batch: 230619

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 230106

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1-Chloro-3-nitrobenzene	100	75.1		ug/L		75	10 - 130	5	50
2-Nitrobiphenyl	100	78.2		ug/L		78	10 - 130	5	50
3-Nitrobiphenyl	100	82.7		ug/L		83	10 - 130	7	50
3,4-Dichloronitrobenzene	100	73.8		ug/L		74	10 - 130	6	50
4-Nitrobiphenyl	100	81.0		ug/L		81	10 - 130	8	50
2-chloronitrobenzene / 4-chloronitrobenzene	200	151		ug/L		76	10 - 130	7	50
1-chloro-2,4-dinitrobenzene	100	77.9		ug/L		78	10 - 130	5	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*65*		*38 - 130*

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Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-230106/25-A
Matrix: Water
Analysis Batch: 230619

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 230106

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorophenol	*61*		*25 - 130*
Nitrobenzene-d5	*73*		*39 - 130*
Phenol-d5	*60*		*25 - 130*
Terphenyl-d14	*82*		*10 - 143*
2,4,6-Tribromophenol	*65*		*31 - 141*

Lab Sample ID: 680-77165-3 MS
Matrix: Water
Analysis Batch: 230616

Client Sample ID: GM-58A-0212
Prep Type: Total/NA
Prep Batch: 230106

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1'-Biphenyl	9.9	U	98.8	67.3		ug/L		68	54 - 130
2,4-Dichlorophenol	9.9	U	98.8	70.3		ug/L		71	54 - 130
Nitrobenzene	9.9	U	98.8	70.8		ug/L		69	56 - 130
Pentachlorophenol	49	U	98.8	79.8		ug/L		77	42 - 138
2,4,6-Trichlorophenol	16		98.8	93.0		ug/L		78	57 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
2-Fluorobiphenyl	*65*		*38 - 130*
2-Fluorophenol	*54*		*25 - 130*
Nitrobenzene-d5	*64*		*39 - 130*
Phenol-d5	*50*		*25 - 130*
Terphenyl-d14	*65*		*10 - 143*
2,4,6-Tribromophenol	*72*		*31 - 141*

Lab Sample ID: 680-77165-3 MSD
Matrix: Water
Analysis Batch: 230616

Client Sample ID: GM-58A-0212
Prep Type: Total/NA
Prep Batch: 230106

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1'-Biphenyl	9.9	U	91.3	59.6		ug/L		65	54 - 130	12	50
2,4-Dichlorophenol	9.9	U	91.3	56.7		ug/L		62	54 - 130	22	50
Nitrobenzene	9.9	U	91.3	57.7		ug/L		61	56 - 130	20	50
Pentachlorophenol	49	U	91.3	77.2		ug/L		80	42 - 138	3	50
2,4,6-Trichlorophenol	16		91.3	83.5		ug/L		73	57 - 130	11	50

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
2-Fluorobiphenyl	*63*		*38 - 130*
2-Fluorophenol	*50*		*25 - 130*
Nitrobenzene-d5	*58*		*39 - 130*
Phenol-d5	*52*		*25 - 130*
Terphenyl-d14	*71*		*10 - 143*
2,4,6-Tribromophenol	*76*		*31 - 141*

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Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-230979/4
Matrix: Water
Analysis Batch: 230979

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			03/08/12 12:53	1
Ethylene	1.0	U	1.0		ug/L			03/08/12 12:53	1
Methane	0.58	U	0.58		ug/L			03/08/12 12:53	1

Lab Sample ID: LCS 680-230979/2
Matrix: Water
Analysis Batch: 230979

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	282	249		ug/L		88	75 - 125
Ethylene	271	230		ug/L		85	75 - 125
Methane	153	131		ug/L		86	75 - 125

Lab Sample ID: LCSD 680-230979/3
Matrix: Water
Analysis Batch: 230979

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	282	310		ug/L		110	75 - 125	22	30
Ethylene	271	286		ug/L		106	75 - 125	22	30
Methane	153	163		ug/L		107	75 - 125	22	30

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 680-230089/1-A
Matrix: Water
Analysis Batch: 230166

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 230089

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		02/27/12 09:30	02/27/12 18:16	1
Iron, Dissolved	0.050	U	0.050		mg/L		02/27/12 09:30	02/27/12 18:16	1
Manganese	0.010	U	0.010		mg/L		02/27/12 09:30	02/27/12 18:16	1
Manganese, Dissolved	0.010	U	0.010		mg/L		02/27/12 09:30	02/27/12 18:16	1

Lab Sample ID: LCS 680-230089/2-A
Matrix: Water
Analysis Batch: 230166

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 230089

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	1.00	1.06		mg/L		106	75 - 125
Iron, Dissolved	1.00	1.06		mg/L		106	75 - 125
Manganese	0.500	0.549		mg/L		110	75 - 125
Manganese, Dissolved	0.500	0.549		mg/L		110	75 - 125

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Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-230258/5
Matrix: Water
Analysis Batch: 230258

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			02/28/12 15:33	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			02/28/12 15:33	1

Lab Sample ID: LCS 680-230258/6
Matrix: Water
Analysis Batch: 230258

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	250	245		mg/L		98	80 - 120

Lab Sample ID: LCSD 680-230258/27
Matrix: Water
Analysis Batch: 230258

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	250	245		mg/L		98	80 - 120	0	30

Method: 325.2 - Chloride

Lab Sample ID: MB 680-230187/27
Matrix: Water
Analysis Batch: 230187

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			02/28/12 09:58	1

Lab Sample ID: LCS 680-230187/2
Matrix: Water
Analysis Batch: 230187

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.0		mg/L		100	85 - 115

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-230028/14
Matrix: Water
Analysis Batch: 230028

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			02/24/12 15:28	1

Lab Sample ID: LCS 680-230028/15
Matrix: Water
Analysis Batch: 230028

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.497	0.506		mg/L		102	90 - 110
Nitrate Nitrite as N	0.998	1.01		mg/L		101	90 - 110
Nitrite as N	0.502	0.507		mg/L		101	90 - 110

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Method: 375.4 - Sulfate

Lab Sample ID: MB 680-230428/1
Matrix: Water
Analysis Batch: 230428

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.0	U	5.0		mg/L			03/01/12 10:42	1

Lab Sample ID: LCS 680-230428/2
Matrix: Water
Analysis Batch: 230428

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	19.2		mg/L		96	75 - 125

Method: 415.1 - DOC

Lab Sample ID: 680-77165-2 MS
Matrix: Water
Analysis Batch: 230396

Client Sample ID: GM-31A-F(0.2)-0212
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	4.8		20.0	23.7		mg/L		94	80 - 120

Lab Sample ID: 680-77165-2 MSD
Matrix: Water
Analysis Batch: 230396

Client Sample ID: GM-31A-F(0.2)-0212
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	4.8		20.0	23.6		mg/L		94	80 - 120	0	20

Method: 415.1 - TOC

Lab Sample ID: MB 680-230367/2
Matrix: Water
Analysis Batch: 230367

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0	U	1.0		mg/L			02/29/12 16:18	1

Lab Sample ID: LCS 680-230367/4
Matrix: Water
Analysis Batch: 230367

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	19.7		mg/L		99	80 - 120

Lab Sample ID: 680-77165-1 MS
Matrix: Water
Analysis Batch: 230367

Client Sample ID: GM-31A-0212
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	4.8		20.0	23.9		mg/L		96	80 - 120

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Method: 415.1 - TOC (Continued)

Lab Sample ID: 680-77165-1 MSD
Matrix: Water
Analysis Batch: 230367

Client Sample ID: GM-31A-0212
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	4.8		20.0	25.7		mg/L		105	80 - 120	7	25

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GC/MS Semi VOA

Prep Batch: 230106

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-77165-1	GM-31A-0212	Total/NA	Water	3520C	
680-77165-1 - DL	GM-31A-0212	Total/NA	Water	3520C	
680-77165-3	GM-58A-0212	Total/NA	Water	3520C	
680-77165-3 MS	GM-58A-0212	Total/NA	Water	3520C	
680-77165-3 MSD	GM-58A-0212	Total/NA	Water	3520C	
680-77165-5	GM-31A-0212-AD	Total/NA	Water	3520C	
680-77165-5 - DL	GM-31A-0212-AD	Total/NA	Water	3520C	
LCS 680-230106/13-A	Lab Control Sample	Total/NA	Water	3520C	
LCS 680-230106/24-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 680-230106/14-A	Lab Control Sample Dup	Total/NA	Water	3520C	
LCSD 680-230106/25-A	Lab Control Sample Dup	Total/NA	Water	3520C	
MB 680-230106/12-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 230616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-77165-3	GM-58A-0212	Total/NA	Water	8270C	230106
680-77165-3 MS	GM-58A-0212	Total/NA	Water	8270C	230106
680-77165-3 MSD	GM-58A-0212	Total/NA	Water	8270C	230106

Analysis Batch: 230619

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-77165-1	GM-31A-0212	Total/NA	Water	8270C	230106
680-77165-5	GM-31A-0212-AD	Total/NA	Water	8270C	230106
LCS 680-230106/24-A	Lab Control Sample	Total/NA	Water	8270C	230106
LCSD 680-230106/25-A	Lab Control Sample Dup	Total/NA	Water	8270C	230106

Analysis Batch: 230641

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-230106/13-A	Lab Control Sample	Total/NA	Water	8270C	230106
LCSD 680-230106/14-A	Lab Control Sample Dup	Total/NA	Water	8270C	230106
MB 680-230106/12-A	Method Blank	Total/NA	Water	8270C	230106

Analysis Batch: 231479

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-77165-1 - DL	GM-31A-0212	Total/NA	Water	8270C	230106
680-77165-5 - DL	GM-31A-0212-AD	Total/NA	Water	8270C	230106

GC VOA

Analysis Batch: 230979

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-77165-1	GM-31A-0212	Total/NA	Water	RSK-175	
680-77165-3	GM-58A-0212	Total/NA	Water	RSK-175	
LCS 680-230979/2	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-230979/3	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 680-230979/4	Method Blank	Total/NA	Water	RSK-175	

Metals

Prep Batch: 230089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-77165-1	GM-31A-0212	Total Recoverable	Water	3005A	

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Metals (Continued)

Prep Batch: 230089 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-77165-2	GM-31A-F(0.2)-0212	Dissolved	Water	3005A	
680-77165-3	GM-58A-0212	Total Recoverable	Water	3005A	
680-77165-4	GM-58A-F(0.2)-0212	Dissolved	Water	3005A	
LCS 680-230089/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-230089/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 230166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-77165-1	GM-31A-0212	Total Recoverable	Water	6010B	230089
680-77165-2	GM-31A-F(0.2)-0212	Dissolved	Water	6010B	230089
680-77165-3	GM-58A-0212	Total Recoverable	Water	6010B	230089
680-77165-4	GM-58A-F(0.2)-0212	Dissolved	Water	6010B	230089
LCS 680-230089/2-A	Lab Control Sample	Total Recoverable	Water	6010B	230089
MB 680-230089/1-A	Method Blank	Total Recoverable	Water	6010B	230089

General Chemistry

Analysis Batch: 230028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-77165-1	GM-31A-0212	Total/NA	Water	353.2	
680-77165-3	GM-58A-0212	Total/NA	Water	353.2	
LCS 680-230028/15	Lab Control Sample	Total/NA	Water	353.2	
MB 680-230028/14	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 230187

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-77165-1	GM-31A-0212	Total/NA	Water	325.2	
680-77165-3	GM-58A-0212	Total/NA	Water	325.2	
LCS 680-230187/2	Lab Control Sample	Total/NA	Water	325.2	
MB 680-230187/27	Method Blank	Total/NA	Water	325.2	

Analysis Batch: 230258

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-77165-1	GM-31A-0212	Total/NA	Water	310.1	
680-77165-3	GM-58A-0212	Total/NA	Water	310.1	
LCS 680-230258/6	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-230258/27	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-230258/5	Method Blank	Total/NA	Water	310.1	

Analysis Batch: 230367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-77165-1	GM-31A-0212	Total/NA	Water	415.1	
680-77165-1 MS	GM-31A-0212	Total/NA	Water	415.1	
680-77165-1 MSD	GM-31A-0212	Total/NA	Water	415.1	
680-77165-3	GM-58A-0212	Total/NA	Water	415.1	
LCS 680-230367/4	Lab Control Sample	Total/NA	Water	415.1	
MB 680-230367/2	Method Blank	Total/NA	Water	415.1	

Analysis Batch: 230396

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-77165-2	GM-31A-F(0.2)-0212	Dissolved	Water	415.1	
680-77165-2 MS	GM-31A-F(0.2)-0212	Dissolved	Water	415.1	

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General Chemistry (Continued)

Analysis Batch: 230396 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-77165-2 MSD	GM-31A-F(0.2)-0212	Dissolved	Water	415.1	
680-77165-4	GM-58A-F(0.2)-0212	Dissolved	Water	415.1	

Analysis Batch: 230428

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-77165-1	GM-31A-0212	Total/NA	Water	375.4	
680-77165-3	GM-58A-0212	Total/NA	Water	375.4	
LCS 680-230428/2	Lab Control Sample	Total/NA	Water	375.4	
MB 680-230428/1	Method Blank	Total/NA	Water	375.4	

Client Sample ID: GM-31A-0212

Lab Sample ID: 680-77165-1

Date Collected: 02/23/12 11:20

Matrix: Water

Date Received: 02/24/12 08:57

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			1052.6 mL	1 mL	230106	02/27/12 15:42	RBS	TAL SAV
Total/NA	Analysis	8270C		1			230619	03/03/12 14:01	WHP	TAL SAV
Total/NA	Prep	3520C	DL		1052.6 mL	1 mL	230106	02/27/12 15:42	RBS	TAL SAV
Total/NA	Analysis	8270C	DL	2			231479	03/13/12 18:17	WHP	TAL SAV
Total/NA	Analysis	RSK-175		1	17000 uL	17 mL	230979	03/08/12 13:06	AJMC	TAL SAV
Total Recoverable	Prep	3005A			50 mL	50 mL	230089	02/27/12 09:30	CDJ	TAL SAV
Total Recoverable	Analysis	6010B		1			230166	02/27/12 19:12	RAM	TAL SAV
Total/NA	Analysis	353.2		1	2.0 mL	2.0 mL	230028	02/24/12 15:35	JNC	TAL SAV
Total/NA	Analysis	325.2		1	2 mL	2 mL	230187	02/28/12 09:37	JR	TAL SAV
Total/NA	Analysis	310.1		1	1.0 mL	1.0 mL	230258	02/28/12 16:57	TH	TAL SAV
Total/NA	Analysis	415.1		1	25 mL	25 mL	230367	02/29/12 17:05	JR	TAL SAV
Total/NA	Analysis	375.4		5	2 mL	2 mL	230428	03/01/12 12:13	JR	TAL SAV

Client Sample ID: GM-31A-F(0.2)-0212

Lab Sample ID: 680-77165-2

Date Collected: 02/23/12 11:20

Matrix: Water

Date Received: 02/24/12 08:57

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	230089	02/27/12 09:30	CDJ	TAL SAV
Dissolved	Analysis	6010B		1			230166	02/27/12 19:17	RAM	TAL SAV
Dissolved	Analysis	415.1		1			230396	02/29/12 21:07	JR	TAL SAV

Client Sample ID: GM-58A-0212

Lab Sample ID: 680-77165-3

Date Collected: 02/23/12 10:00

Matrix: Water

Date Received: 02/24/12 08:57

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			506.9 mL	0.5 mL	230106	02/27/12 15:42	RBS	TAL SAV
Total/NA	Analysis	8270C		1			230616	03/03/12 07:00	WHP	TAL SAV
Total/NA	Analysis	RSK-175		1	17000 uL	17 mL	230979	03/08/12 13:19	AJMC	TAL SAV
Total Recoverable	Prep	3005A			50 mL	50 mL	230089	02/27/12 09:30	CDJ	TAL SAV
Total Recoverable	Analysis	6010B		1			230166	02/27/12 19:22	RAM	TAL SAV
Total/NA	Analysis	353.2		1	2.0 mL	2.0 mL	230028	02/24/12 15:36	JNC	TAL SAV
Total/NA	Analysis	325.2		1	2 mL	2 mL	230187	02/28/12 09:42	JR	TAL SAV
Total/NA	Analysis	310.1		1	1.0 mL	1.0 mL	230258	02/28/12 17:05	TH	TAL SAV
Total/NA	Analysis	415.1		1	25 mL	25 mL	230367	02/29/12 17:54	JR	TAL SAV
Total/NA	Analysis	375.4		5	2 mL	2 mL	230428	03/01/12 12:13	JR	TAL SAV

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Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK Rt. 3 Drum Site O&M/1Q12 - FEB 2012

TestAmerica Job ID: 680-77165-1
SDG: KOM015

Client Sample ID: GM-58A-F(0.2)-0212

Lab Sample ID: 680-77165-4

Date Collected: 02/23/12 10:00
Matrix: Water
Date Received: 02/24/12 08:57

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			50 mL	50 mL	230089	02/27/12 09:30	CDJ	TAL SAV
Dissolved	Analysis	6010B		1			230166	02/27/12 19:26	RAM	TAL SAV
Dissolved	Analysis	415.1		1			230396	02/29/12 21:48	JR	TAL SAV

Client Sample ID: GM-31A-0212-AD

Lab Sample ID: 680-77165-5

Date Collected: 02/23/12 11:20
Matrix: Water
Date Received: 02/24/12 08:57

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3520C			1051.2 mL	1 mL	230106	02/27/12 15:42	RBS	TAL SAV
Total/NA	Analysis	8270C		1			230619	03/03/12 14:28	WHP	TAL SAV
Total/NA	Prep	3520C	DL		1051.2 mL	1 mL	230106	02/27/12 15:42	RBS	TAL SAV
Total/NA	Analysis	8270C	DL	2			231479	03/13/12 18:46	WHP	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

APR 02 2012

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Dave Palmer	Site Contact: Michael Corbett	Date: 2/23/12	COC No:
URS Corporation	Tel/Fax: (314) 743-4154	Lab Contact: Lidya Gulizia	Carrier: FedEx	1 of 1 COCs
1001 Highlands Plaza Drive West, Suite 300	Analysis Turnaround Time			Job No. 680-77165 21562682.00006
St. Louis, MO 63110	Calendar (C) or Work Days (W)			
(314) 429-0100 Phone	TAT if different from Below			
(314) 429-0462 FAX	☒ 2 weeks			
Project Name: 1Q12 Route 3 GW Sampling	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	SVOCs by 8270C	Total Fe/Mn by 6010B	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Methane by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010B	DOC by 415.1	Sample Specific Notes:
GM-31A-0212	2/23/12	1120	G	Water	11		2	1	1	1	3	2	1			
GM-31A-F(0.2)-0212		1120	G	Water	2	X								1	1	
GM-58A-0212		1000	G	Water	11		2	1	1	1	3	2	1			
GM-58A-F(0.2)-0212		1000	G	Water	2	X								1	1	
GM-58A-0212-MS		1000	G	Water	2		2									
GM-58A-0212-MSD		1000	G	Water	2		2									
GM-31A-0212-AD		1100	G	Water	2		2									
1Q12 Route 3 Trip Blank #				Water	2		2									
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other							1	4	1	1	1	3,1	2	4	2	

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant Poison B ☐ Unknown ☐

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ■ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments: Level 4 Data Package

Temp 1.9°C, 1.7°C

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	URS	2/23/12 1600	[signature]	TA	2/23/12 1600
[signature]	TA	2/23/12 1645	Ruth A Daughtry	TA SAV	02.24.12 @ 0857

APR 02 2012

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-77165-1
SDG Number: KOM015

Login Number: 77165
List Number: 1
Creator: Daughtry, Beth

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.9 and 1.6 C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the sample IDs on the containers and the COC.	False	Trip Blank listed on COC - did not rec'v
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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Certification Summary

Client: Solutia Inc.
Project/Site: WGK Rt. 3 Drum Site O&M/1Q12 - FEB 2012

TestAmerica Job ID: 680-77165-1
SDG: KOM015

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Savannah	A2LA	DoD ELAP		0399-01
TestAmerica Savannah	A2LA	ISO/IEC 17025		399.01
TestAmerica Savannah	Alabama	State Program	4	41450
TestAmerica Savannah	Arkansas	State Program	6	N/A
TestAmerica Savannah	Arkansas DEQ	State Program	6	88-0692
TestAmerica Savannah	California	NELAC	9	3217CA
TestAmerica Savannah	Colorado	State Program	8	N/A
TestAmerica Savannah	Connecticut	State Program	1	PH-0161
TestAmerica Savannah	Florida	NELAC	4	E87052
TestAmerica Savannah	GA Dept. of Agriculture	State Program	4	N/A
TestAmerica Savannah	Georgia	State Program	4	803
TestAmerica Savannah	Georgia	State Program	4	N/A
TestAmerica Savannah	Guam	State Program	9	09-005r
TestAmerica Savannah	Hawaii	State Program	9	N/A
TestAmerica Savannah	Illinois	NELAC	5	200022
TestAmerica Savannah	Indiana	State Program	5	N/A
TestAmerica Savannah	Iowa	State Program	7	353
TestAmerica Savannah	Kentucky	State Program	4	90084
TestAmerica Savannah	Kentucky (UST)	State Program	4	18
TestAmerica Savannah	Louisiana	NELAC	6	30690
TestAmerica Savannah	Louisiana	NELAC	6	LA100015
TestAmerica Savannah	Maine	State Program	1	GA00006
TestAmerica Savannah	Maryland	State Program	3	250
TestAmerica Savannah	Massachusetts	State Program	1	M-GA006
TestAmerica Savannah	Michigan	State Program	5	9925
TestAmerica Savannah	Mississippi	State Program	4	N/A
TestAmerica Savannah	Montana	State Program	8	CERT0081
TestAmerica Savannah	Nebraska	State Program	7	TestAmerica-Savannah
TestAmerica Savannah	New Jersey	NELAC	2	GA769
TestAmerica Savannah	New Mexico	State Program	6	N/A
TestAmerica Savannah	New York	NELAC	2	10842
TestAmerica Savannah	North Carolina DENR	State Program	4	269
TestAmerica Savannah	North Carolina DHHS	State Program	4	13701
TestAmerica Savannah	Oklahoma	State Program	6	9984
TestAmerica Savannah	Pennsylvania	NELAC	3	68-00474
TestAmerica Savannah	Puerto Rico	State Program	2	GA00006
TestAmerica Savannah	Rhode Island	State Program	1	LAO00244
TestAmerica Savannah	South Carolina	State Program	4	98001
TestAmerica Savannah	Tennessee	State Program	4	TN02961
TestAmerica Savannah	Texas	NELAC	6	T104704185-08-TX
TestAmerica Savannah	USDA	Federal		SAV 3-04
TestAmerica Savannah	Vermont	State Program	1	87052
TestAmerica Savannah	Virginia	NELAC	3	460161
TestAmerica Savannah	Washington	State Program	10	C1794
TestAmerica Savannah	West Virginia	State Program	3	9950C
TestAmerica Savannah	West Virginia DEP	State Program	3	94
TestAmerica Savannah	Wisconsin	State Program	5	999819810
TestAmerica Savannah	Wyoming	State Program	8	8TMS-Q

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

APR 02 2012

TestAmerica Savannah